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Financial performance explanations and institutional setting

Walter Aerts and Ann Tarca*

Abstract – The aim of this study is to investigate whether country differences in the institutional setting for financial reporting affect the attributes of managers' explanations of performance in management commentary reports. We include 172 listed companies from five industries (building materials, food processors, pharmaceuticals, biotechnology and retail) in the UK, Australia, the USA and Canada in 2003. We find significant country differences in attributional properties of performance explanations in management commentary reports. The US and Canadian companies are generally less assertive and less defensive in causal explanations offered compared to their counterparts in the UK and Australia. The North American companies are also more extensive and formal in their explanations, relying more heavily on technical-accounting language. These tendencies are most pronounced in the USA, where the aggregate of private and public enforcement is greatest. Taken together, our evidence suggests that higher expected regulatory and litigation costs induce a more elaborative, but risk-averse explanatory stance that may well reduce the overall incremental value of the explanations offered.

Keywords: management discussion and analysis (MD&A); operating and financial review (OFR); regulation; enforcement; litigation; attributional statements

1. Introduction

The aim of this study is to investigate the attributes of performance explanations in narrative accounting reports in a cross-country setting. Narrative reports often accompany companies' financial statements, to give a view of the company 'through the eyes of management' (ASB, 2003; SEC, 1989). Explanations of earnings and related performance outcomes make up a large part of the management commentary. A recent survey of the Fortune Global 500 companies' narrative reporting reveals that 56% of narrative reporting relates to explaining performance outcomes (PwC, 2007). Explanations occur whenever content moves beyond the mere offering of information to matters of meaning, relationships, causes, factors, and reasons (Keil, 2006). By offering incremental information about the link between a performance outcome and its internal and external antecedents, narrative explanations are a useful extension of the financial reporting model (Baginski et al., 2000; Baginski et al., 2008).

In this study we consider the effect of a company's national institutional environment (with its embedded regulatory control mechanisms and litigation risk) on the explanatory statements in a company's management commentary. We hypothesise that differences in expected regulatory and litigation costs may lead to significantly different explanatory attitudes between companies and qualitatively different information content in narrative reports. Prior research on regulation and litigation-related disclosure incentives has mainly focused on disclosure behaviour with regard to earnings forecasts, conference calls and earnings announcements (Skinner, 1994; Francis et al., 1994; Rogers and Van Buskirk, 2009). We extend this research by considering how these incentives affect the way companies cope with demands for decision-useful performance explanations in management commentary reports. The issue is important as concerns have been raised about the extent of generic and 'boilerplate' disclosures in narrative reports (SEC, 2003; FRC, 2007). In this vein, we examine properties of the attributional (or explanatory) framing of financial performance outcomes and consider how they differ between countries. By properties of attributional framing we mean the characteristics of explanations such as their relative occurrence, complexity, consistency, type of argument used and self-serving propensity. By observing differences in attributional properties of disclosure between companies from qualitatively different institutional environments, we are able to make inferences about managers' beliefs about the relationship between attributional statements and expected regulatory and litigation costs.

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We select four common law countries (the USA, Canada, the UK and Australia) where public information dissemination is central to efficient capital markets but there are differences in expected regulatory and litigation costs. At the time of the study, companies from the USA and Canada provided management discussion and analysis (MD&A) reports in response to mandatory requirements while companies in the UK and Australia followed best-practice guidelines. With regard to the institutional setting, of which the mandatory and voluntary regimes are part, the UK is generally perceived as having the lowest and the USA the highest expected regulatory and litigation costs, with Australia and Canada occupying something of a middle position (Khurana and Raman, 2004; Seetharaman et al., 2002; La Porta et al., 2006). The issue of regulatory and litigation costs is linked to whether the reporting regime is mandatory or voluntary, but it goes beyond the type of regime to represent the broader setting in which financial reporting occurs. We analyse the MD&A or operating and financial review (OFR) reports of 172 listed companies from five industries (building materials, food processors, pharmaceuticals, biotechnology and retail) for the 2003 financial year. Consistent with prior research on the effects of accountability pressures on individual and organisational behaviour (e.g. Tetlock, 1999), we expect that environments with more regulation and monitoring and higher potential litigation risk will lead to more detailed and formal explanations of performance which feature more consistent presentation traits and less self-serving bias.

Our results are generally consistent with these predictions. Companies from the USA and Canada are relatively less assertive and less defensive in their explanations than their counterparts in the UK and Australia.[1] The North American companies include more and more extensive explanations and are more likely to use more formal language and to rely more on technical-accounting explanations relative to causal explanations. The effects identified are strongest for companies from the USA, where MD&A reports are mandatory and public and private enforcement is highest. Our evidence suggests that higher expected regulatory and litigation costs bring companies to display significant effort to explain performance outcomes but in a risk-averse way, thereby constraining the type of explanations which have been shown to be the most revealing (Baginski et al., 2000, 2004) and tending towards 'boilerplate' disclosures, by making extensive use of easily replicable, intermediary technical-accounting explanations.

Our study extends the literature in several ways. First, we add to prior international studies comparing features of management commentary reports (Collins et al., 1993; Beattie and McInnes, 2006; PwC, 2007) by focusing on the attributional framing in those reports. Second, we extend the literature on attributional properties in narrative reports (Aerts, 1994, 2005; Clatworthy and Jones, 2003, 2006) by using an international comparative setting. Prior research on attributional statements generally relies on a one-country setting and ignores the impact of country-level characteristics. A third area of contribution relates to providing empirical evidence about the impact of the institutional environment and related enforcement differences on the content of management commentary reports. We show detailed differences in attributional framing in institutional settings which vary with regard to the extent of mandatory requirements and expected regulatory and litigation costs, suggesting that these differences drive explanatory patterns to a considerable extent. We also add to studies about the impact of litigation-related incentives on disclosure behaviour (Francis et al., 1994; Skinner, 1994, 1997; Rogers et al., 2009), which will be of interest to market participants and regulators.

2. Background and hypotheses

We propose that between-country differences in institutional setting will affect the properties of performance explanations contained in management commentary reports. In this section we provide an overview of the differences in the institutional setting of the four countries selected for study. We also present relevant prior research about attributional statements and develop our hypotheses.

2.1. Institutional setting

At the time of the study (2003) narrative reports were provided in response to mandatory regulations in the USA and Canada and voluntary best-practice guidelines in the UK and Australia (see Table 1). There are many similarities in the frameworks of the UK and Australia, which have legal systems with common origins and a system of company regulation through common and statute law. There was considerable guidance and encouragement to pro-

[1] In general, assertiveness in explanations refers to the tendency to acclaim positive outcomes and explain them more from internal than external causal antecedents, whereas defensiveness in explanations relates to the tendency to deny responsibility for negative outcomes and explain negative outcomes more from external than internal causal antecedents. Specific measurements capturing these tendencies are shown in Appendix 1.

vide management commentary information, but disclosure in UK and Australian companies' reports was largely of a voluntary nature. In contrast in the USA the Securities and Exchange Commission (SEC) has promulgated many requirements relating to the form and content of management reports. In Canada the Canadian Securities Administrators (CSA) require listed companies to provide an MD&A. The stated aim of the MD&A and its required topics are similar in the USA and Canada (Table 1). Although the reports are mandatory and there is extensive guidance about content, the actual items included and the way they are discussed is under the discretion of management and thus may reflect both company factors and the institutional setting in which they are made.

The general objective of the rules/guidance is to promote detailed discussion to assist users' interpretations of the information provided in the financial statements. The explanations provided become part of the accountability mechanisms operating within listed companies' institutional environments. Accountability mechanisms refer to the means by which companies are held responsible and answerable for past decisions and actions. They include narrative reports as well as other reporting and governance mechanisms.

Accountability mechanisms hold both threats and opportunities. Accountability pressures increase with the demands of external constituencies and with the perceived severity of potential sanctions. On the other hand, they create generally accepted channels through which relevant stakeholders can be persuaded to grant approval of the company's position and performance and provide continued support. Within a public accountability context, it is hard to argue that explanations in narrative reports are simply the outcome of an internalised and communicated data analysis process. Companies are likely to develop coping strategies in their explanations, depending on the nature of what has to be explained and the context in which the causal claims are made, including the audience to whom the company is accountable (Edelman, 1977; Gardner and Martinko, 1988; Tetlock, 1985, 1999).

Research in an accountability setting suggests that perceptions of the relevant audiences and of related rewards and sanctions are likely to significantly affect performance explanations of those held accountable (Gibbins and Newton, 1994; Johns, 1999; Tetlock, 1985; Tetlock and Lerner, 1999; Weick, 1995). Audience characteristics and embedded rewards and sanctions have been shown to be effective determinants of coping behaviour at an interpersonal level, but operate in functionally equivalent ways at the (inter) organisational level (Elsbach, 2003; Harrison et al., 1988; Suchman, 1995; Weick, 1995). Moreover, within a formal institutional setting, regulatory and legal mechanisms tend to enforce accountability processes. Such mechanisms usually strengthen accountability demands and lead to increased institutional scrutiny pressures, which may affect the relative costs and rewards of argumentation choices in management commentary reports.

The institutional settings of the four sample countries involve developed market economies with legal systems based on a common law regulatory framework (La Porta et al., 1997, 1998). However, there are important differences between the countries in relation to both public and private enforcement mechanisms which may impact on attributional statements.[2] A primary public enforcement difference between the countries relevant to management commentary relates to the extent to which MD&A reporting is mandatory or mainly voluntary. The presence of explicit rules of compliance in a mandatory reporting regime facilitates both public and private enforcement actions and, thus, heightens perceived regulatory and litigation costs.[3]

However, even within a mandatory regime the extent of active monitoring and enforcement of mandatory rules differs. Public enforcement actions have been taken in relation to MD&A reports in the USA but not in Canada. The SEC has required companies to amend and expand their MD&A filings and, in some cases, imposed large fines for inadequate and misleading disclosure (SEC, 2004b). While the cases may not relate specifically to performance explanations, they illustrate that companies in the USA operate in an environment where enforcement action has been taken in relation to MD&A reports. In contrast, the minimal nature of mandatory rules in the UK and Australia (at the time

[2] Public enforcement involves the use of a public agent such as a regulatory body to detect and sanction violations of normative rules. Public regulatory bodies use their power a priori (by stipulating mandatory rules of compliance) and a posteriori (by imposing sanctions and penalties). Private enforcement operates through civil law suits brought by private parties under existing contract and tort law.

[3] The USA operates a more closely regulated system with regard to MD&A disclosures. The SEC has a supervisory role in the creation and application of MD&A rules. In the USA and Canada the regulators monitor the information provided. Like their counterparts the SEC, the Canadian Securities Administrators (CSA) have contacted companies directly requesting re-submission of MD&A reports (Clarkson et al., 1994). In addition, the Canadian Institute of Chartered Accountants (CICA) has provided guidance, which is supported by the CSA (IASCF, 2005).

Table 1
Framework for narrative reports (2003)

	Purpose	*Legal requirements/voluntary guidelines*	*Topics*
USA	The basic requirement for the MD&A is to 'provide such other information that the registrant believes to be necessary to provide an understanding of its financial condition, changes in financial condition and results of operations' (SEC, 2002).	Mandatory report for all listed companies. Specific components of the MD&A are required by Regulation S-K, Item 303, SEC releases including 33-8056, 33-8182, 34-45321, 34-47264, FR-67 and the SEC Act 1934, section 13(j).[a]	(1) application of critical accounting policies (2) results of operations (3) liquidity (4) capital resources (5) off-balance sheet arrangements.
CANADA	The MD&A is a narrative explanation, through the eyes of management, of how a company performed during the period covered by the financial statements, and of the company's financial condition and future prospects. MD&A complements and supplements the financial statements, but does not form part of the financial statements (OSC, 2004a, 2004b).	Mandatory report for all listed companies. National Instrument Form 51-102F1, December 2003 (OSC, 2004a)	(1) operations (2) financial condition (3) liquidity (4) forward-looking information (5) risk and uncertainty.
UK	To allow shareholders and others to make a proper assessment not only of the company's past performance but also the directors' view on the company's future prospects and its approach to managing social and environmental issues, which are crucial to the company's future success and reputation (DTI, 2001).	Voluntary report. Operating and Financial Review Statement (ASB, 2003). Recommended for all large and listed companies.	(1) nature of the business, its objectives and the strategies adopted to achieve those objectives; (2) performance of the business in the period and the main influences on performance, including the expected effects of known trends and the potential effect of risks facing the business; and (3) financial position, including capital structure and treasury policy, and the factors affecting and likely to affect that position (ASB, 2003).
AUSTRALIA	Purpose for review of operations not stated.	Corporations Act Section 299 Directors' Report to contain a Review of Operations. The Australian Stock Exchange requires all listed companies provide a Review of Operations and recommends the G100 *Guide to Review of Operations and Financial Condition* be followed (ASX, 2004) AASB 1039 required a Discussion and Analysis report to accompany concise financial reports.	(1) company overview and strategy; (2) review of operations; (3) investments for future performance; (4) review of financial condition; (5) risk management; (6) corporate governance (G100, 2003).

[a] SEC (1968, 1974, 1980, 1987, 1989, 2001, 2002, 2004a, 2004c, 2004d)

of our study) inhibits regulatory action and thus minimises regulatory costs in these countries.

The voluntary versus mandatory nature of MD&A reporting is, however, endogenous to the wider institutional environment in which company reporting functions. In this regard, La Porta et al. (2006) provide useful measures of public and private enforcement to quantify inter-country differences in expected regulatory and litigation costs. They propose that the USA has the highest level of enforcement for both the litigation standard (1.00) and the public enforcement index (0.90) and the UK the lowest (0.66 and 0.68, respectively). Averaging both indices to provide an overall measure which captures both public and private enforcement and thereby proxies for the general regulatory and litigation environment in the four countries, we get the following country ranking: (1) USA average of 0.95, (2) Canada average of 0.90, (3) Australia average of 0.78, and (4) UK average of 0.67.[4] We will use this ranking to differentiate expected regulatory and litigation costs across the four countries. The ranking is consistent with previous research identifying significant differences in litigation risk among the sample countries (Ball et al., 2000; Khurana and Raman, 2004; Baginski et al., 2002; Seetharaman et al., 2002; Hughes and Sankar, 2006). Litigation risk is far greater in the USA than in Canada, the UK and Australia (Seetharaman et al., 2002; Khurana and Raman, 2004). Moreover, Ball et al. (2000) argue that expected litigation costs are lower in the UK than in Australia, Canada and the USA. With regard to public enforcement, Bhattacharya (2006) documents that the SEC enforces securities laws much more vigorously than their Canadian counterparts. The SEC has taken several enforcement actions against registrants in relation to MD&A, including the Edison Schools Inc., Sony Corporation, Caterpillar Inc., American Express Company and Bank of Boston Corporation and K-Mart cases (SEC 2005a, 2005b). Similar cases have not occurred in Canada, the UK and Australia.

2.2. Attributional properties of management commentary

Explanatory patterns within the context of accounting narratives have been studied on several occasions, mainly from an attribution theory perspective (Aerts, 1994, 2001, 2005; Bettman and Weitz, 1983; Baginski et al., 2004, 2008; Clatworthy and Jones, 2003, 2006; Merkl-Davies and Brennan, 2007; Salancik and Meindl, 1984; Staw et al., 1983). Attribution theory relates to how people explain the causes and antecedents of events. It focuses on perceived causality: people's inferences about what causes things to happen and why things happen as they do. Attributional statements are narrative statements reflecting a cause-effect or antecedent-consequence relationship.

Numerous authors demonstrate a corporate tendency to attribute positive effects or outcomes in the annual reports to the company's own actions or corporate origins (company strategy, decisions, know-how, human resources potential) and negative outcomes to external events or chance factors (business climate, inflation, market prices, government policy, weather) (Baginski et al., 2000; Bettman and Weitz, 1983; Clapham and Schwenk, 1991; Clatworthy and Jones, 2003; Hooghiemstra, 2003, 2008; Salancik and Meindl, 1984; Tsang, 2002; Wagner and Gooding, 1997). This explanation style is considered as self-serving because situations and events are defined to the company's own advantage. The self-serving explanation pattern can be decomposed into an assertive component (stressing the importance, relevance and scope of positive outcomes or actions) and more defensive characteristics (downplaying the significance of negatively evaluated events). In general, assertive tendencies refer to framing positive outcomes in such a way that their effect is heightened through entitlements, enhancements and selective positiveness of the image presented. Defensive tendencies relate to excuses, justifications, and denials of negative effects (Gardner and Martinko, 1988; Elsbach, 1994, 2003) (See Appendix 1 for further detail of definitions). Prior research also points to a pattern of intentional attributional search for positive news when overall performance declines (Aerts, 2005; Clatworthy and Jones, 2003; Elsbach and Kramer, 1996), accompanied by a tendency to substitute negative overall earnings measures by fractional earnings measures of a positive kind (e.g. on divisional, subgroup or segmental level).

Explanations in annual report narratives are frequently expressed through formal accounting language, with its specific terminology and inherent calculative relationships. Such technical-accounting explanations use the internal logic of the financial accounting model, relating intermediary accounting effects and categories, in order to make sense of and rationalise corporate performance outcomes (Edelman, 1977). Such formal language explanations are inherently ambiguous as the con-

[4] Canada scores 0.9 on the litigation standard and 0.8 on the public enforcement index. The corresponding scores for Australia are 0.66 and 0.9.

cepts and relationships that they reflect tend to be analytical and not descriptive like causal explanations expressed in natural language. Research shows that the use of accounting explanations tends to be biased relative to the tenor of the accounting outcome that is explained (Aerts, 1994; Hooghiemstra, 2003), with positive performance outcomes explained more in explicit cause-effect terminology and less through technical-accounting explanations.

2.3. Hypotheses

We argue that regulatory and legal mechanisms that enforce accountability processes increase expected external scrutiny, thus affecting preparation of performance explanations. Although the outcome of formal legal and regulatory scrutiny is highly uncertain and related litigation is activated only in exceptional cases, higher expected regulatory and litigation costs are likely to heighten the ex ante salience of accountability predicaments resulting from companies' explanatory activities and create the countervailing interests that compel companies to become more self-conscious about the consequences of disclosure about their performance. More specifically, we argue that higher scrutiny pressures coming from higher expected regulatory and litigation costs bring about a disclosure environment in which explanatory effort is promoted, self-presentational tendencies are reduced and more formal disclosure positions prevail.

2.3.1. Explanatory effort

Stronger regulatory and legal accountability mechanisms increase accountability demands upon companies and are expected to affect information processing and related framing of performance disclosures. Accountability research within the domain of social psychology and organisational behaviour points out that, in understanding the effect of accountability on behaviour, it is important to distinguish between situations in which the actor is aware of accountability demands before or after the act in question (pre- versus post-decisional accountability) (Tetlock and Lerner, 1999). Pre-decisional accountability induces more self-critical, integrated, complex ways of reasoning and a more consistent way of handling evaluative content (i.e. recognising both good and bad features of particular events and explaining good and bad news consistently) (Lerner and Tetlock, 1999). Kunda (1990) documents that such circumstances lead to more cognitive effort on issue-related reasoning, with deeper and more careful information handling and often with use of more complex rules. Pre-decisional accountability tends to affect the length of the actor's analysis and evaluation of evidence but also its complexity.

Higher expected regulatory and litigation costs heighten the ex ante salience of accountability predicaments arising from companies' explanatory activities and lead to a situation that is functionally equivalent to pre-decisional accountability. In a comparable vein, Johns (1999) argues that the extent to which public accountability is accompanied by actual or anticipated feedback prompts a situation of what he calls 'proactive scrutiny'. Proactive scrutiny typically promotes the use of argument as an appropriate way to display rationality and encourages cognitive effort in the sense of a more intense attributional search when performance outcomes are disclosed (Gibbins and Newton, 1994; Staw, 1980; Weick, 1983). Proactive scrutiny would not only affect the amount of explanatory activity but also its quality, which encompasses consideration of a greater number of alternatives and more evidence.

The above arguments suggest that higher expected regulatory and litigation costs are likely to increase the relative amount of reported accounting outcomes that are explained (density of attribution statements) and/or the number of explanations offered for each accounting outcome (depth of attribution statements). The explanatory or cognitive effort argument leads to the following hypothesis:

H1: In an institutional setting with higher expected regulatory and litigation costs companies offer more explanations for financial performance outcomes (*density of explanations and depth of explanations*).

2.3.2. Inconsistency in explanatory format for positive versus negative content

A more self-critical approach induced by higher accountability pressures usually involves more tolerance for evaluative inconsistency (Lerner and Tetlock, 1999), meaning that both positive and negative features of performance outcomes are recognised and explained. Pre-decisional accountability motivates more vigilant information processing and brings people to consider arguments on both sides of an issue and to employ more consistent patterns of reasoning and cue utilisation (Hagafors and Brehmer, 1983; Tetlock, 1999). These findings suggest that under higher scrutiny positive and negative outcomes would be treated more consistently in terms of extent or nature of explanation. Where prior research (Aerts, 1994, 2005;

Clatworthy and Jones, 2003, 2006) documents a tendency to prefer causal explanations for positive outcomes (informality bias on positive outcomes), scrutiny forces would reduce such a tendency and promote less bias in how positive versus negative accounting outcomes are explained. In this regard, less inconsistency in explanatory format for positive versus negative content would imply that both types of outcome are explained more similarly in terms of type of explanation offered (causal explanation versus formal technical-accounting explanation) with a less biased use of each type of explanation for positive and negative outcomes (a phenomenon we refer to as 'valence inconsistency in formality of explanations') or in terms of the number of explanations offered for each positive versus negative outcome (referred to as 'valence inconsistency in depth of explanations').

This leads to our second hypothesis:

H2: In an institutional setting with higher expected regulatory and litigation costs companies exhibit less inconsistency in explanatory format for positive versus negative financial performance outcomes (*valence inconsistency in formality of explanations and valence inconsistency in depth of explanations*).

2.3.3. Formality of explanations

Sutton and Galunic (1996) argue that intense external scrutiny causes managers to focus attention and effort on symbolic activities and on well-rehearsed acts and to follow injunctive rather than descriptive norms. Accordingly, scrutiny pressures may promote a tendency to opt for explanations of performance outcomes that are socially well-endorsed, non-controversial and easily justifiable (Scott and Lyman, 1968). Formal technical-accounting explanations, which feature a kind of tautological reiteration of accounting's logical relationships, provide such generally accepted, salient and consensual explanations (Gowler and Legge, 1983; Aerts, 1994, Hooghiemstra, 2003). By their socially constructed and intermediary nature, they are analytical but not descriptive of actual causality (Hines, 1988). They do, however, reflect injunctive norms as they arise from generally accepted ways of analysing and presenting performance measures. Moreover, technical-accounting explanations are, in essence, litigation-proof in that they avoid making explicit assignment of responsibility and difficult value tradeoffs in describing causal influences. In that sense, they may be preferred to causal disclosures in an environment characterised by higher litigation risk such as the USA.

Moreover, neo-institutional theory argues that the more institutionalised the environment in which managers operate, the more interactions and accountability relationships become ritualised and over-learned (Weick, 1995). Such conditions may promote the use of more formal and rigid explanations in the context of periodic management commentaries. Formal technical-accounting explanations may be particularly prone to a kind of programmed processing of disclosures, leading to 'boilerplate' disclosures. In this regard, Nelson and Pritchard (2007) show that US MD&A disclosures are increasingly 'sticky' with a general tendency to 'cut and paste' disclosure from the prior year. Such a tendency may result in more rigid argumentation patterns in explaining accounting outcomes, with a preference for replicable, easily defensible and socially endorsed explanatory categories (Tetlock, 1985, 1999). Technical-accounting explanations, with their self-evident and uncontroversial character, may be prone to automatic processing of narrative disclosure scripts and could easily lead to programmed, ritual-like explanatory disclosures. Thus the following hypothesis is proposed:

H3: In an institutional setting with higher expected regulatory and litigation costs companies use more formal explanations of financial performance outcomes (*relative use of technical accounting explanations, informality bias on positive outcomes*).

2.3.4. Self-serving explanations

Jones and Pittman (1982) argue that the more institutionalised the environment in which explanations for success and failure are offered, the less impression management is likely to be involved. Moreover, behavioural accountability research demonstrates that actors temper their self-enhancement tendencies when they expect to face a judgmental evaluator post hoc (Sedikides and Herbst, 2002; Sedikides et al., 2002; Johns, 1999). This suggests that proactive scrutiny, associated with higher expected regulatory and litigation costs, is likely to attenuate self-serving behaviour.

Partial empirical support for this argument comes from the few cross-country or replication studies (Hooghiemstra, 2008; Tsang, 2002) that demonstrate that the significantly stronger self-presentational biases generally found in US samples relative to Asian samples (Mezulis et al., 2004) could not be replicated (and were even reversed for defensive tendencies) within the institutionalised context of annual report narratives, suggesting that the differ-

ential institutional setting of the Asian versus the US capital market significantly constrains and even inverses generally expected cultural differences in self-presentational behaviour. When the explanatory process itself is under high scrutiny, as is the case in the USA, self-presentation needs get less priority or become less important because the dominant audience's response will be based on an assessment of the characteristics or quality of the framing process, and less on the performance outcome itself (Lerner and Tetlock, 1999). Rogers and Van Buskirk (2009) indicate that the litigation process in the USA leads to companies decreasing disclosures for which they may later be held accountable, despite the protection offered by the Private Securities Litigation Reform Act of 1995. This is consistent with the view that US MD&A disclosure is increasingly scrutinised, internally and externally, through a legal lens. Self-serving explanations may be especially targeted (and avoided) in this respect, leading to the following hypothesis:

H4: In an institutional setting with higher expected regulatory and litigation costs companies exhibit less self-serving tendencies in financial performance explanations (*assertive causal bias, defensive causal bias, use of entitlements and enhancements, use of excuses, justifications and causality denials*).

3. Data and method

3.1. Sample selection

The four countries selected for this study (the USA, Canada, the UK and Australia) were chosen because capital markets are important sources of company finance in each country. Company disclosure is likely to be important for a number of reasons, which reflect aspects of capital markets such as raising external capital, demonstrating managerial talent and securing compensation (Healy and Palepu, 2001). The selection of the four countries allows us to investigate attribution patterns in management commentary reports where all companies have incentives to provide information, but there are differences in their institutional setting. Listed companies were selected because our focus was on public accountability.

Prior research suggests that company size and industry membership are associated with disclosure (Lang and Lundholm, 1993, 1996; Beattie et al., 2002, 2004; Hooks and Moon, 1993; Cole and Jones, 2004). To control for industry effects, we selected our sample from only five industries (building materials, food processors, pharmaceuticals, biotechnology and retail).

We selected the three largest companies in each industry group in each country (n = 60) (based on a Datastream list of the largest 500 companies by market capitalisation in each country) so that the companies likely to provide the most disclosure in each industry were included. However, the largest companies in each country differed markedly in size between countries, with Australian and Canadian companies being significantly smaller and US companies being significantly larger than average. Therefore, in the second stage of sample selection we selected companies based on their relative size. We calculated each company's relative size based on its market capitalisation as a proportion of the total market capitalisation for its country. Within each industry group in each country, we grouped companies into deciles based on relative market capitalisation (excluding the largest three companies, which are included in stage one) from largest to smallest. Within each decile, we then selected four firms (one from each country) which were of a similar size (defined as having a relative market size that was within a 5% range) to give up to ten additional companies in each country from each industry.[5]

The number of companies selected in the second stage differs between countries because it reflects the number of companies in the industry group for each country and the number which could be size matched across the four countries. For example, the UK and Australia had relatively more listed companies in the building materials sector than the USA and Canada, so the UK and Australian samples are larger in this sector. In the pharmaceuticals sector, there were more listed companies in the USA and Canada from which to select the sample companies so the sample in this sector has more US and Canadian companies than Australian and UK companies. Thus the final sample comprises both the three largest companies in each industry in each country (from the first stage) and well as a number of additional companies (based on relative size) from the second stage.

The sample selection in the second stage was helpful because we have included many companies of similar relative size, however it did result in an unequal distribution of companies across countries

[5] For example, in the food producer group in relative size decile 0.40–0.49, we selected (AUS) SPC Ardmona 0.0449, (UK) Dairy Crest Group 0.0412, (USA) Dean Foods 0.0427 and (CAN) Canada Bread 0.0676. Relative size difference (maximum less minimum) expressed as a percentage = 6.7% – 4.1% = 2.6%. If the decile group did not include four companies, we included only the number available (e.g. for the decile 0.20–0.29 we included three companies (AUS) Select Harvests 0.027, (UK) Geest 0.0258 and (USA) Bunge 0.0274.

Table 2
Sample selection by country and industry

Industry	*USA*	*%*	*Canada*	*%*	*UK*	*%*	*Australia*	*%*	*Industry total*	*%*	*Population*	*Sample %*
Building materials	**4**	**8**	**5**	**14**	**7**	**15**	**9**	**23**	**25**	**15**	**28**	**89**
Largest three companies	3		3		3		3		12			
Additional companies	1		2		4		6		13			
Food processors	**11**	**22**	**8**	**22**	**10**	**21**	**7**	**19**	**36**	**21**	**46**	**78**
Largest three companies	3		3		3		3		12			
Additional companies	8		5		7		4		24			
Pharmaceuticals	**12**	**23**	**8**	**22**	**7**	**15**	**7**	**19**	**34**	**20**	**42**	**81**
Largest three companies	3		3		3		3		12			
Additional companies	9		5		4		4		22			
Biotechnology	**13**	**25**	**10**	**28**	**10**	**21**	**7**	**19**	**40**	**23**	**42**	**95**
Largest three companies	3		3		3		3		12			
Additional companies	10		7		7		4		28			
Retail	**11**	**22**	**5**	**14**	**13**	**28**	**8**	**20**	**37**	**21**	**72**	**51**
Largest three companies	3		3		3		3		12			
Additional companies	8		2		10		5		25			
Total	**51**	**30**	**36**	**21**	**47**	**27**	**38**	**22**	**172**	**100**	**230**	**75**

This table shows the sample selection by industry and country. Industry groups are based on Datastream industry classifications. Each industry group includes the three largest companies (based on market capitalisation at 31 December 2003) and up to ten additional companies, subject to the number of companies in the industry as per Datastream lists of the largest 500 companies in each country. The additional companies are selected by matching companies based on similar relative market size (company market capitalisation/total country market capitalisation). The number of companies within the largest 500 in each country is shown by industry group in the column headed 'population' and the proportion of companies in the sample is shown in the column headed 'Sample'.

and industries. Nevertheless, there are sufficient companies in each industry and company group to allow valid inferences to be drawn at the country level. The final sample includes 172 companies, with 51 (30%) from the USA, 36 (21%) from Canada, 47 (27%) from the UK and 38 (22%) from Australia. Representation from industry groups was as follows: building materials 25 companies (15%); food processors 36 (21%); pharmaceuticals 34 (20%); biotechnology 40 (23%) and retail 37 (21%) (Table 2). The final sample is 75% of the population 230.[6] The proportion of sample companies/population is generally high (building materials 89%, food processors 78%, pharmaceuticals 81%; biotechnology 95% and retail 51%, Table 2) suggesting that the final sample is likely to be representative of the population.

Table 3 provides descriptive statistics for the sample companies. Significant differences between companies from the four countries are observed for several attributes. The US and UK companies are larger and followed by more analysts than the Australian and Canadian companies. The UK companies are more international than average, with a higher proportion of foreign revenue and more US foreign listings. The sample includes 11 UK, four Canadian and four Australian companies with a 20-F listing. The UK and Australian companies rank more highly than average on the corporate governance composite score (a score out of three, where 1 is added if the board chair is a non-executive director, the majority of the board are independent directors and the company uses a committee structure, i.e. audit, nomination and remuneration committees). Most companies are audited by a Big 4 company (USA 94%, Canada 92% and the UK 98%). Australia has a lower proportion of Big 4 audited companies (71%).

[6] The population for each country is the companies in the five industry groups located in the largest 500 companies by market capitalisation.

Table 3
Descriptive statistics

	Full sample N = 172 Mean (Std dev.)	*USA N = 51 Mean (Z statistic)*	*Canada N = 36 Mean (Z statistic)*	*UK N = 47 Mean (Z statistic)*	*Australia N = 38 Mean (Z statistic)*
Panel A					
Size	7,922.28	18,273.74	630.62	7,726.19	715.66
	(28,344.70)	(***5.60)	(***3.53)	(*1.73)	(***4.63)
Change in leverage	0.00	0.22	–0.20	–0.04	–0.07
	(2.84)	(0.80)	(0.73)	(0.07)	(0.10)
Change in profitability	–2.32	–2.39	–2.85	–2.83	–1.08
	(114.30)	(0.01)	(0.41)	(0.90)	(0.57)
Foreign revenue	0.21	0.14	0.20	0.34	0.16
	(0.31)	(1.31)	(1.21)	(***3.99)	(1.67)
Number of operating segments	1.92	2.02	1.63	1.89	2.08
	(1.29)	(0.45)	(0.72)	(0.87)	(1.14)
Market-to-book ratio	3.92	4.41	2.73	3.33	5.08
	(4.66)	(1.57)	(**2.11)	(0.94)	(1.32)
Capital intensity	0.47	0.34	0.58	0.61	0.35
	(1.19)	(0.06)	(0.97)	(0.83)	(0.12)
Corporate governance composite	2.53	2.21	2.54	2.70	2.76
	(0.62)	(***4.60)	(0.19)	(***2.45)	(**2.64)
Number of analysts	9.60	11.46	6.40	14.34	4.16
	(9.32)	(***2.89)	(**2.09)	(***3.47)	(***4.90)
Panel B					
US 20-F listing	19 (11%)	NA	4 (11%)	11 (23%)	4 (11%)
Big 4 auditor	155 (90%)	49 (94%)	33 (92%)	46 (98%)	27 (71%)
Negative EPS in 2003	44 (26%)	13 (25%)	16 (44%)	11 (23%)	4 (11%)
Chi-square statistic		0.50	**6.40	0.82	0.55

Descriptive statistics for continuous and dichotomous variables for the full sample and four countries. Size = market value, 31 December 2003, US$ million. Change in leverage = (total debt/total equity 2003 – 2002)/ total debt/total equity 2002. Change in profitability = (ROE 2003 – 2002)/ABS ROE 2002. Foreign revenue = proportion of foreign revenue to total revenue. Market-to-book = market value of equity at financial year-end/book value of equity. Capital intensity = non-current assets/total assets. Corporate governance status = score out of three, where 1 is added if board chair is a non-executive director, the majority of the board are independent directors and the company uses a committee structure (audit, nomination and remuneration committee). Analyst following = number of analysts following a company. Panel A shows means and standard deviations are shown for the full sample and means and Mann Whitney Z statistics for each country (for tests comparing mean ranks for each country and the other three). Panel B reports chi-square statistics (which compare proportions in each country and the full sample) for negative EPS. Chi-square tests are not conducted for US-20F listing and Big 4 auditor due to occurrence of cell sizes are below 5. US 20-F listing, Big 4 auditor and Negative EPS are one if applicable to the company and zero 0 otherwise. *** significant at $p < 0.01$. ** significant at $p < 0.05$. * significant at $p < 0.10$ (two-tailed tests).

Companies do not differ significantly in whether they experienced a change in profitability in the year of study. Only the Canadian sample had more loss-making companies (44%) than average (26%) and, not surprisingly, the market-to-book ratio was lower than average for Canadian companies.

The year 2003 was selected to capture existing differences in the institutional environment for management commentary reports. As noted above, regulators in the USA and Canada required mandatory reports. In 2003 reports in the UK and Australia reflected primarily voluntary recommendations. By 2004 the UK had announced the introduction of mandatory reports (an initiative later withdrawn) (FRC, 2005) and Australia introduced requirements for management discussion and

analysis as part of reform of company law (CLERP 9) (ASIC, 2005). The year 2003 was selected so that reports predated the changes in the institutional environment in the UK and Australia.[7] We select only one year for study due to the time consuming nature of data collection, the need to collect sufficient cases in each of the four countries and the difficulty of controlling for the impact of changes in the institutional framework over time in four countries. A time series design would introduce noise as the institutional settings changed, making hypothesis testing more difficult.[8]

3.2. Coding procedure

The coding procedure involves two steps: (1) independent identification of the attributional statements (defined as a phrase or a sentence in which a performance outcome is linked with a reason or a cause for the outcome); and (2) independent coding of the attributional statements according to the characteristics of explained effects and explanatory factors. The explained effects are coded according to five characteristics: nature, valence, time orientation, qualification and analytical level of explained content. For each characteristic, different elements are discriminated. The explanatory factors (causes) are coded according to six characteristics: explicitness of the antecedent–consequence relationship, direction of influence of the antecedent–consequence relationship, time orientation and qualification of the explanatory factor, nature of the antecedent–consequence relationship and locus of causality. As for explained effects, the characteristics are classified according to different elements (see Appendix 2). The explanatory passages selected must refer to the reporting entity or its components.

In step 1 the reports were read by two researchers independently (Coders 1 and 2). All explanatory passages were marked and divided into explained outcomes (or effects) and explanatory antecedent factors. The coders then compared results and reached agreement on the coding. Intercoder agreement on the initial identification phase amounted to 91%.[9] If coders were unable to resolve a matter, one of the chief researchers was the arbiter. In step 2, two other researchers (Coders 3 and 4) were responsible for coding the effects and explanatory factors according to specific content characteristics noted above. Coders 3 and 4 worked independently, compared results and resolved any matters of disagreement by reference to one of the chief researchers. Initial intercoder agreement on the coded dimensions amounted to, on average, 88%.[10]

As the study focuses on the relationship between the annual financial statements and the narrative sections of the annual report, we confine data collection to attributional statements about accounting performance outcomes (profit and loss items such as income, expenses and earnings/margins). There are several reasons to focus on performance outcomes. Earnings and its components are key metrics for the company and its investors and are likely to give rise to explanatory statements. In this regard, a recent survey of the narrative reports of Fortune Global 500 companies shows that the majority of the narratives relate to explaining performance outcomes and this finding was consistent over different jurisdictions (PwC, 2007).

Pilot testing of our content data confirmed that the majority of statements in the management commentary relate to performance explanations.

[7] Managers in the UK and Australia could have anticipated changes in narrative reporting requirements and changed the content of their management commentary reports prior to legislative change. If so, we would predict that increased regulation and oversight would lead attribution statements to be more like those of North American managers. Thus any bias introduced by managers anticipating change favours not finding country differences and therefore does not explain our results.

[8] Although 2003 follows on from dramatic events in the USA in 2001–2002 (the collapse of Enron, WorldCom and Arthur Anderson and the terrorist attacks) we conjecture that, despite these events, management commentary reports in 2003 are not essentially different to those in immediate prior years. In both the UK and Australia regulators concluded that the existing regulatory framework was sound, implying that the environment in 2003 did not differ in particular ways from immediate prior years. A 2001–2002 UK government review reported 'no serious flaw' in the existing regulatory framework (DTI, 2004: 6). ASIC (2003: 47) stated there was 'no material risk' of Enron type abuses. Even in the USA, 2003 does not seem to be a year of radical change of MD&A content in relation to performance outcomes. Nelson and Pritchard (2007), studying cautionary language discussing risk factors and MD&A disclosure over the period 1996–2003 show that the extent of these disclosures steadily increases over the period. In 2001–2003, it is especially the cautionary language content which increases relative to the rest of the MD&A. They do not identify a breach of trend in MD&A content in 2003.

[9] Intercoder reliability was measured based on the coefficient of agreement, which is the ratio of the number of pairwise interjudge agreements to the total number of pairwise judgments (Beattie et al., 2002: 20).

[10] Robustness of data collection (Behn et al., 2001) was assured in the following ways. First, step 1 data identification was separated from step 2 classification to promote independence in analysis. Second, for 74 companies drawn from all countries and industries (42% of the total sample), all the work of the step 1 and step 2 coders was reviewed by the chief researchers who read the management commentary reports, checked that the identification of explained effects and explanatory factors was complete and that the classification of the content characteristics was correct. The process of double-checking of 42% of the sample, review of all coding by the chief researchers and the level of intercoder agreement provide assurances as to the accuracy and completeness of coding.

Moreover, the valence (favourable/unfavourable) of explained profit and loss items is usually more straightforward and less subjective than the tenor of, for example, explained items of financial position such as new financing, leverage or extent of capital expenditure. Confining attributional disclosures to explanations of profit and loss items generally improves comparability and strengthens the reliability of the coding process.

The following example illustrates an explained effect (coded as Income/earnings/profit; Positive effect; Present year; Quantitative; Segment of the company; Implicit link) and its related explanatory factors (coded as Same direction; Present year; Qualitative; Causal explanation; Internal cause – reference to management/board):

Effect statement
'The segment result has increased by $41.1 million, or 66.3% to $103.8 million. After adjusting for accounting policy changes the segment result would have been $116.4 million for 2003, representing an increase of $54.0 million or 86.5% for the year.'

Explanatory statement
'**...** Kmart's (the segment) strong result was a direct reflection of the strategy put in place last year to move the Brand to the leadership position in discount department store retailing.'
Coles Myer Annual Review 2003, p. 28 (Australia Retail)

3.3. Company-level aggregation and dependent variables

As the company and not the specific instance of attribution is treated as the unit of analysis, coding results are aggregated at company level, after meaningful selections on relevant attributional categories at the individual attributional statement level (as specified in Appendix 2). Appendix 1 explains key attributional concepts and describes the company-level attributional properties used as dependent variables and their measurement.[11] The company-level attributional variables are primarily expressed as frequency and related difference measures, although some were additionally transformed into proportional measures, reflecting the relative frequencies of specific attributional characteristics. Additional coding examples are provided in Appendix 3.

[11] In Appendix 1 the dependent variables used for hypothesis testing are marked with an asterisk. The dependent variables are grouped by hypothesis.

3.4. Empirical models

The following regression model is used to investigate the determinants of attributional reporting:

$$\textit{Company-level attributional content variable}_{it} = f\,(\textit{Company size, Diversification, Corporate governance status, Negative earnings per share, Growth, Analyst following, Capital intensity, Change in leverage, Change in profitability, Filing status,, Industry dummies, Country dummies})_{it} \quad (1)$$

In order to isolate the country-level effect (the country dummies in the regression model), we control for company and industry variables that proxy for the demand and supply of disclosure and could therefore affect properties of attributional statements. Data was obtained from the Datastream database (which also provides access to I/B/E/S for data on analyst following) and directly from company annual reports (sourced from the Mergent database and company websites). Justification of control variables is outlined below.

Larger company size is commonly associated with amount and quality of voluntary disclosure (Lang and Lundholm, 1993). More specifically, Baginski et al. (2004, 2008) show that the use of causal explanations increases with company size. Aerts (2005) evidences that larger companies use more enhancements and entitlements, but less defensive attributional statements. Company size is measured as the natural logarithm of the company's market capitalisation (in USD).[12] Company diversification will have an impact on the complexity of the operations underlying the accounting outcomes and on the supply of accounting outcomes eligible for attributional activity. Li (2008) shows that the use of causal language in MD&A is related to the number of reporting segments. Aerts (2005) suggests that attributions of segmental accounting outcomes complement or substitute attributional arguments at corporate level, depending on the tenor of the latter. We use the number of business segments and the percentage of foreign sales as proxies for diversification.

Corporate governance status proxies for monitoring mechanisms that are likely to affect discretionary narrative disclosures. For example, it is suggested that boards are more effective in monitoring company insiders when there is a strong base of independent directors on the board (Fama and Jensen, 1983; Xie et al., 2003). Dechow et al.

[12] Multicollinearity between company size and analyst following brings us to drop company size in the main regression models. Dropping analyst following instead of company size does, however, not qualitatively affect our results.

(1996) show that companies with a large percentage of non-executive directors are less likely to be subject to enforcement actions by the SEC for accounting policy violation. We proxy for corporate governance status using a self-constructed composite measure (score out of three, where 1 is added if board chair is a non-executive director, the majority of the board are independent directors and the company uses a committee structure, i.e. audit, nomination and remuneration committees) based on data disclosed in the annual reports. We select these three indicators because they have been identified as key aspects of a company's governance structure that influence external reporting behaviour (Dechow et al., 1996; Dahya et al., 2002; Xie et al., 2003).

Financial analysts are primary users of MD&A and create a demand for incremental attributional content (Clarkson et al., 1994; Schleicher et al., 2007). Lang and Lundholm (1996) and Healy et al. (1999) find a positive relation between analyst following and the quality of a company's disclosure. Market premium (market-to-book ratio) is used as a proxy for growth potential and investment opportunity set. Growth companies may also have more complex and uncertain business models, increasing both the supply and demand for attributional disclosure. Li (2008) shows that the market-to-book ratio is positively related to causal language use in MD&A. Market-to-book is measured as market value of equity at financial year-end divided by book value of equity. In addition, we expect that the level of capital investment intensity, a well-known measure of entry barriers and proxy for product market competition (Dye, 1985; Darrough and Stoughton, 1990) to be associated with attributional activity. Capital intensity may be an important attribute for explaining changes in accounting outcomes. It measured as total non-current assets divided by total assets.

Company profitability and leverage can have both a motivational and an informational impact on the content of accounting narratives. From an informational perspective, level of and change in these variables proxy for good versus bad news and directly affect the supply of information to be explained. As well, level and change in profitability may provide strong incentives for impression management and trigger qualitatively different attributional statements (Aerts, 2001, 2005; Clatworthy and Jones, 2006; Hooghiemstra, 2003). We include proxies to control for level and change in profitability (relative change in return on equity and a negative EPS dummy) and change in leverage (relative change total debt over total equity).

Prior research has shown that cross-listing increases the level and quality of disclosure, especially if a company is cross-listed on a foreign market that is more regulated than the domestic market. Therefore we expect that SEC foreign registrants will experience disclosure pressures (including attributional disclosure demands) similar to those of US companies. We use a dummy for a Form 20-F filing by a non-US company. Finally, we include dummy variables (for four of the five industry groups) because industry membership has been shown to influence voluntary disclosure (McKinnon and Dalimunthe, 1993; Malone et al., 1993; Meek et al., 1995) and industry-specific features may lead to distinctive disclosure patterns, including specific attributional disclosures (Aerts, 2005).

Including analyst following in our model creates a potential problem of endogeneity with regard to disclosure properties (Tong, 2007; Hope, 2003). Both may be affected by a common disclosure strategy. Financial analysts are more likely to follow companies with more informative disclosures, while, on the other hand, companies may disclose more in order to attract more financial analysts. In that vein, narrative disclosure properties and analyst following may be simultaneously determined. If companies manage their explanatory reporting with the benefits of more analyst following in mind, the assumption of no interdependence is violated, which leads to unreliable OLS-statistics. Endogeneity between explanatory reporting and analyst following leads us to use a 2SLS approach for the above regression with analyst following estimated according to the following model (while dropping company size in the attributional content regression due to multicollinearity):

$$\textit{Analyst following}_{it} = f(\textit{20F filing, Company size, Market-to-book ratio, Return variability, Industry, Country})_{it} \quad (2)$$

The rationale for the relationship of analyst following and explanatory variables is as follows. A Form 20-F filing by non-US companies may create greater demand for analysts' services (Lang et al., 2003). A US listing is likely to stimulate activity by analysts in the foreign country, adding to the domestic supply of analysts' services. From the supply side, analysts may be more inclined to follow cross-listed companies since they are more likely to attract a larger investor base.

Bhushan (1989) argues that company size affects both the aggregate demand and the aggregate supply for analysts' services. Demand is positively affected by company size because the aggregate

potential payoff for shareholders from access to higher quality information is more important for larger companies. Supply is positively affected, because there are significant fixed costs in following a company and the payoff from following is related to its size. Analyst coverage has been shown to be related to Tobin's Q (Lang et al., 2003). The demand for analyst services will generally be higher in high-intangible asset companies, where the informativeness of financial reports is relatively lower (Amir et al., 2003; Barth et al., 2001). Prior research documents a relation between earnings volatility and analyst coverage (e.g. Bhushan, 1989; Lang et al., 2003), suggesting that demand for analysts' services is higher for companies with higher financial risk. We measure return variability as the standard deviation of the return on assets during the prior five fiscal years divided by the mean. Industries are not likely to equally attract financial analysts, so dummy variables are used to control for industry effects. Chang et al. (2000) provide evidence that country-level institutional variables affect the availability of analyst forecasts. Hence, we introduce country dummies to control for any country effect.

4. Results

4.1. Descriptive statistics

Table 4 presents descriptive statistics for the attributional content variables (in total and by country). The average number of attributional statements is 33.46, relative to an average of 16.19 explained outcomes, i.e. on average, each attributed outcome is accompanied by 2.04 explanations.[13] There are more positively evaluated outcomes than negatively evaluated ones (9.50 positives versus 6.52 negatives). Prospective outcomes represent, on average, 12.31% of the explained effects, an average of 1.73 prospective attributions per management commentary.[14]

Nearly 61% of the explained outcomes relate to company level information with the balance covering outcomes on a segment level (business or geographical segments, divisions, legal entities, product lines – 39.10%). More than one-third of the explanatory statements can be qualified as intermediary explanations (technical-accounting explanations) (38.37%) and these are biased towards the framing of negative accounting outcomes, a tendency referred to as 'informality bias on positives' (see Appendix 1).

As to the self-serving characteristics of the attributional statements, a majority of the explanations relate to positively perceived accounting outcomes, but this self-promotional effect is not overwhelming (55.95% of the explained effects are evaluated as positive). The moderate character of the overall positiveness factor may reflect the fact that only explanations of performance were coded. By ignoring explanations of company actions and decisions not expressed in profit and loss terminology, managerial discretion in selecting and commenting on facts with positive ramifications is only partially captured in our data set.

Self-serving tendencies become more apparent in the causal assertiveness bias (i.e. number of positive outcomes explained with reference to internal causes minus number of positive outcomes explained with reference to external causes). The average value of 4.95 indicates a strong acclaiming bias, but a comparable causal defensiveness bias (i.e. number of negative outcomes explained with reference to external causes minus number of negative outcomes explained with reference to internal causes) does not hold for the full sample.

The country differences in attributional behaviour as shown in Table 4 are broadly consistent with our hypotheses. We support this assertion by comparing the USA and the UK on the key attributional metrics. Depth of explanations and density of explanations (H1 cognitive effort) are both higher in the USA relative to the UK. As to H2 (inconsistency in explanatory format of positive versus negative content), valence inconsistency in formality of explanations is considerably higher in the UK than in the USA, but this observation does not extend to valence inconsistency in depth of explanations.[15] Consistent with H3 (formality of explanations), we observe that US companies use considerably more formal language explanations than UK companies and this seems to be driven mainly by not avoiding formal, intermediary

[13] We are unable to compare the average number of attributional statements in our study to that in prior studies because the average number depends heavily on the coding procedures used. Coding dimensions affecting the number of attributional statements are: section of the annual report coded (chairman's statement versus MD&A), types of outcome included (accounting outcomes only versus all types of corporate outcomes), types of argument included (only causal explanations or including technical-accounting explanations).

[14] This is consistent with a subsequent MD&A survey which shows that about 10% of quantified narrative reporting relates to forward-looking information (PwC, 2007).

[15] Note that for the two measures of inconsistency in explanatory format, the number of observations is reduced to 158 as the valence inconsistency concept refers to a bias in the way positive versus negative outcomes are processed. As it is based on a comparison of the explanatory treatment of outcomes relative to their valence (or evaluative content), the variables require the presence of at least one positive and one negative explained performance outcome in the management commentary (see also Appendix 1).

Table 4
Attributional content descriptive statistics

Explanatory content characteristics at company-level	*Total N = 172 Mean (Std dev.)*	*USA N = 51 Mean (Std dev.)*	*CAN N = 36 Mean (Std dev.)*	*UK N = 47 Mean (Std dev.)*	*AUS N = 38 Mean (Std dev.)*
Amount of explanations					
Number of explained outcomes	16.19	16.64	13.74	22.60	9.89
	(11.48)	(7.99)	(9.12)	(14.95)	(8.36)
Number of positive outcomes	9.50	9.42	6.37	14.02	6.92
	(7.93)	(5.86)	(5.29)	(10.35)	(6.55)
Number of negative outcomes	6.52	7.21	7.14	8.36	2.71
	(5.22)	(3.67)	(5.71)	(6.46)	(2.40)
Number of neutral outcomes	0.17	0.02	0.23	0.21	0.26
	(0.56)	(0.50)	(0.49)	(0.66)	(0.55)
Number of prospective outcomes	1.73	1.72	1.17	1.94	1.50
	(2.04)	(2.04)	(2.43)	(1.86)	(1.90)
Number of explanations	33.46	39.08	28.14	42.11	19.84
	(24.23)	(21.08)	(21.50)	(28.128)	(18.39)
Number of formal explanations	12.83	18.47	11.89	13.94	5.67
	(11.85)	(12.96)	(11.77)	(11.26)	(7.48)
Explanatory effort (H1)					
Depth of explanations	2.04	2.33	2.01	1.88	1.88
	(0.60)	(0.52)	(0.67)	(0.38)	(0.73)
Density of explanations	1.25	1.55	1.10	1.38	0.83
	(0.73)	(0.71)	(0.61)	(0.75)	(0.62)
Inconsistency in explanatory format for positive versus negative content (H2)					
Valence inconsistency in depth of explanations	0.58	0.54	0.61	0.50	0.78
(N = 158)	(0.66)	(0.48)	(0.56)	(0.72)	(0.88)
Valence inconsistency in formality of explanations	13.15	11.39	9.29	17.64	13.10
(N = 158)	(11.77)	(9.46)	(8.36)	(14.40)	(12.07)
Formality of explanations (H3)					
Technical-accounting explanations (%)	38.37	47.28	42.56	33.11	28.58
	(23.81)	(19.67)	(20.76)	(20.61)	(30.06)
Informality bias on positives	6.38	2.87	2.00	11.28	9.24
	(11.19)	(10.46)	(6.44)	(13.06)	(10.17)
Self-serving causal explanations (H4)					
Assertive causal bias on positives	4.95	3.92	3.34	8.17	3.89
	(6.24)	(5.35)	(4.10)	(7.29)	(6.41)
Use of enhancements and entitlements (%)	24.09	18.81	19.67	27.43	31.40
	(17.53)	(13.46)	(19.78)	(14.94)	(20.22)
Defensive causal bias on negatives	–0.94	–2.26	–1.43	0.51	–0.42
	(4.23)	(3.72)	(4.40)	(5.31)	(2.25)
Use of excuses, justifications and causality denials (%)	6.95	6.08	6.67	8.96	5.90
	(8.57)	(6.87)	(7.05)	(9.35)	(10.66)

This table reports mean scores (standard deviation) in total and by country for attribution content variables. Terminology legend of explanatory content characteristics is presented in Appendix 1.

explanations when explaining positive outcomes ('informality bias on positives'). In line with H4 (self-serving causal explanations), all variables for self-serving tendencies in causal explanation are higher for UK companies relative to US companies. The UK companies use relatively more defensive attributional tactics ('excuses', 'justifications' and 'causality denials') and assertive attributional tactics ('enhancements' and 'entitlements') than US companies and exhibit a definite causal bias on both positive and negative outcomes. The descriptive country differences provide indicative support for our hypotheses, which we formally test using multivariate regression analysis.

4.2. Multivariate analyses

Since a company's information dynamics may well affect narrative disclosure and financial analyst following simultaneously, we first assess whether endogeneity exists between these variables using a Hausman test. Using this procedure, results (not-tabulated) reject the null hypothesis of no endogeneity with respect to analyst following and density of explanations, formality inconsistency and the four self-presentational content properties (assertive causal bias; use of entitlements and enhancements; defensive causal bias; use of excuses, justifications and causality denials). The tests did not reject the null hypothesis with regard to the other dependent variables. Given these results, we employ two stage least squares (2SLS) with size omitted in the second stage.[16,17]

4.2.1. Explanatory effort

In order to test our first hypothesis on explanatory effort (H1), we regress 'density of explanations' (Model 1) and 'depth of explanations' (Model 2) on the variables documented in our empirical models including analyst following (Table 5). Results from Models 1 and 2 (Panel A) indicate that the tendency to provide explanations for financial performance outcomes together with the number of explanations offered for each performance outcome is significantly lower in Australia, the UK and Canada than in the USA (the omitted country dummy). Moreover, OLS results (not reported in detail) show that adding the country dummies in a second step significantly increases model fit. Overall, the country variables enhance the regression model's explanatory power with an incremental R-square of .067 ($p < 0.01$). Alternating the omitted country dummies (Models 1 and 2, Panel B) shows no additional differences between the UK and Australia and marginally less explanatory effort between these two countries and Canada. Combining US and Canadian companies in a North America dummy variable (Models 1 and 2, Panel C) generally confirms the broad institutional differences, although the adjusted R-square declines, confirming the relevance of finer-grained country differences. Overall, these results are consistent with H1.

Interestingly, the absolute amount of explanatory reasoning is not associated with the country dummies. Results of regression models on absolute amount of explanatory reasoning (absolute number of explained outcomes and absolute number of explanatory statements) (not tabulated) indicate the absence of significant country effects on absolute amount of attributional search, but shows a very strong and positive effect of analyst following on amount of explanatory reasoning. With density of explanations and depth of explanations being strongly country-dependent, it suggests that H1 mainly works for relative cognitive effort rather than absolute level.

4.2.2. Inconsistency in explanatory format for positive versus negative content

H2 proposes that higher expected litigation and regulatory costs will lead to less inconsistency in the way positive versus negative outcomes are evaluated. Valence inconsistency in formality of explanations proxies for explanatory inconsistency in the sense that there may be a tendency to use technical-accounting explanations more for negative performance outcomes than for positive outcomes. Valence inconsistency in depth of explanations would indicate explanatory inconsistency in the sense that the number of explanations used for each explained outcome would differ between positive and negative performance outcomes. Table 5 reports results for the regression models of both valence inconsistency proxies. Results from Model 3 (Panel A) indicate that Australian and UK companies tend to be significantly less consistent in their use of formal explanations relative to their US counterparts. No differences can be established for Canadian companies that also do not seem to significantly differ on the valence inconsistency property relative to their counterparts in the UK and Australia (Table 5, Panel B). Results from Model 4 (Panel A and B) show no significant

[16] The results relating to the country variables are not materially different when OLS regression techniques are used.

[17] In 2SLS regressions, all exogenous variables are used as instruments. In the case that regressions and error terms are not related, i.e. absence of endogeneity, 2SLS will produce the same estimates as OLS. Therefore, if any of the endogeneously specified variables are in fact exogeneous, the 2SLS is still appropriate (Judge et al., 1988: 655).

Table 5
2SLS regressions – determinants of explanatory effort, inconsistency in explanatory format and formality of explanations

N = 172	*Model 1* *Density of explanations*	*Model 2* *Depth of explanations*	*Model 3* *Valence inconsistency in formality (N=158)*	*Model 4* *Valence inconsistency in depth (N=158)*	*Model 5* *Technical-accounting explanations (%)*	*Model 6* *Informality bias on positives*
Panel A – Initial model						
Constant	***1.349	***2.359	–2.657	***0.923	***0.447	–4.983
Listing 20F	0.017	0.187	**–7.789	0.328	0.056	***–7.698
Change in leverage	–0.014	–0.017	–0.139	0.007	0.005	–0.084
Change in profitability	0.050	**0.095	0.707	**0.139	**–0.037	0.564
Negative EPS	–0.010	–0.151	–3.625	–0.128	0.087	–3.279
I/ Building materials	0.335	**0.332	3.615	0.072	–0.046	**6.065
I/ Pharmaceuticals	**–0.351	–0.074	*4.845	0.256	**–0.144	***7.718
I/ Biotechnology	–0.292	–0.016	4.957	–0.005	*–0.149	*5.673
I/ Food processors	–0.014	*0.224	1.716	0.099	–0.086	2.333
Foreign revenue	0.099	–0.117	3.233	0.036	–0.049	3.776
Number of segments	0.058	–0.018	**1.779	–0.053	–0.006	**1.596
Market-to-book	**–0.029	–0.010	**–0.498	–0.002	**0.009	*–0.381
Capital intensity	–0.022	–0.025	–0.272	0.033	–0.014	–0.617
Corporate governance status	0.015	0.042	0.902	–0.090	*0.045	–1.211
Analyst following	**0.027	–0.010	***0.694	–0.014	–0.003	***0.487
Australia	***–0.533	***–0.545	**5.339	0.236	***–0.251	***11.144
UK	**–0.314	***–0.544	**5.040	–0.027	***–0.144	***8.498
Canada	**–0.282	***–0.363	2.295	0.012	–0.058	2.429
Adj. R-square	0.253	0.167	0.207	0.046	0.102	0.238
Incremental R-square (country variables)	***0.067	***.119	**.027	0.016	***.115	***0.115
Panel B – Alternating country dummies						
UK as the omitted country dummy:						
Australia	–0.219	–0.001	0.299	0.263	*–0.107	2.646
Canada	0.032	*0.181	–2.745	0.040	*0.086	***–6.068
USA	**0.314	***0.544	**–5.040	0.027	***0.144	***–8.498
Canada as the omitted country dummy:						
Australia	*–0.251	*–0.182	3.043	0.224	***–0.193	***8.715
UK	–0.032	*–0.181	2.745	–0.040	*–0.086	***6.068
USA	**0.282	***0.363	–2.295	–0.012	0.058	–2.429
Panel C – Regression models with dummy variable for North America (USA and Canada)						
North America	***0.272	***0.370	**–4.067	–0.068	***0.162	***–8.467
Adj. R-square	0.213	0.124	0.224	0.043	0.096	0.259

Results for 2SLS regression equations examining the association between company-level attributional properties and company attributes. In Panel A the USA is omitted country dummy variable and retail is the

Table 5
2SLS regressions – determinants of explanatory effort, inconsistency in explanatory format and formality of explanations (*continued*)
omitted industry dummy variable. Listing 20F = 1 if the company has a US listing requiring a Form 20-F reconciliation (0 otherwise). Change in leverage = (total debt/total equity 2003 – 2002)/ total debt/total equity 2002. Change in profitability = (ROE 2003 – 2002)/ABS ROE 2002. Negative EPS = 1 if company reports a negative EPS (0 otherwise). Foreign revenue = proportion of foreign revenue to total revenue. Market-to-book = market value of equity at financial year-end/book value of equity. Capital intensity = non-current assets/total assets. Corporate governance status = score out of three, where 1 is added if board chair is a non-executive director, the majority of the board are independent directors and the company uses a committee structure (audit, nomination and remuneration committee). Analyst following = number of analysts following a company. Panel B reports coefficients and significance levels for country dummy variables when they are rotated and the UK and Canada are, respectively, the omitted dummy variables. Panel C reports coefficients and significance levels when countries are grouped into USA/Canada and UK/ Australia and the latter is the omitted dummy variable. *** significant at $p < 0.01$. ** significant at $p < 0.05$. * significant at $p < 0.10$ (two-tailed tests. one-tailed for country variables).

country differences for valence inconsistency in depth of explanations. Overall, these results provide only some weak support for H2. Inconsistency in the use of technical-accounting explanations is strongly associated with analyst following and is negatively affected by being a US foreign registrant, the latter being in line with the strong polarisation of US companies on this property. The lack of significant associations for valence inconsistency in depth of explanations may indicate that the tendency to offer more explanations for a positive versus a negative performance outcome is not associated with the company's information environment, but reflects a more general cognitive tendency.

4.2.3. Formality of explanations

H3 predicts higher use of formal language explanations (technical-accounting explanations) in an environment with higher expected regulatory and litigation costs. Model 5 (Table 5, Panel A) evidences significantly higher relative use of formal language explanations in the USA than in Australia and the UK. Model 6 (Table 5, Panel A) ('informality bias on positives') suggests that this difference is driven by the fact that US companies show a lower tendency to avoid formal language when positive outcomes are explained than their Australian and UK counterparts. Table 5 (Panels A, B and C) documents that Canadian companies are very near to US companies in this respect, while UK companies and Australian companies also tend to behave similarly with regard to the formality of their explanations.

4.2.4. Self-serving causal explanations

H4 predicts that in an institutional setting with higher expected regulatory and litigation costs companies exhibit less self-serving tendencies in financial performance explanations. Table 6 shows two models for the assertive side of self-serving behaviour (Models 7 and 8) and two models for the defensive component of self-serving behaviour (Models 9 and 10). Taking the four models together, a consistent country pattern emerges. Consistent with expectations, Australian and UK companies are significantly more self-serving in their causal explanations than US companies. Differences among Australian and UK companies (Table 6, Panel B) are not significant. Based on the regression coefficients of the country dummies (Table 6, Panels A and B) Canadian companies occupy a somewhat middle position between US companies on one hand and Australian and UK companies on the other, although not all regression coefficients point to significant differences. Moreover, incremental R-square statistics show that adding the country dummies in a second step significantly increases model fit for the four models. Regrouping US and Canadian companies in a North America dummy variable (Table 6, Panel C) is consistent with the former country differences, but increases model fit only for Model 8 (Use of entitlements and enhancements). Results are consistent for both assertiveness in explaining positive outcomes and defensiveness in explaining negative outcomes. Analyst following brings companies to report more self-servingly. In line with the country effect, a Form 20-F filing is associated with non-US companies explaining accounting outcomes less assertively and less defensively.

Overall, analyst following seems to have a significant impact on explanatory behaviour. Whereas more intense analyst following seems to provide a strong incentive to explain more performance outcomes, it does not bring companies to explain more in a consistent and formal way. In fact, higher analyst following brings companies to

Table 6
2SLS regressions – determinants of self-serving attributional tendencies

N = 172	*Model 7* *Assertive causal bias*	*Model 8* *Use of entitlements and enhancements*	*Model 9* *Defensive causal bias*	*Model 10* *Use of excuses, justifications and causality denials*
Panel A – Initial model				
Constant	2.572	1.053	***–4.964	*–4.482
Listing 20F	***–4.721	***–5.411	**–2.729	**–1.561
Change in leverage	–0.049	–0.068	0.076	–0.040
Change in profitability	0.293	0.301	**–0.654	–0.261
Negative EPS	–1.913	*–3.064	*–1.688	–0.930
I/ Building materials	**–3.628	2.238	**2.202	**1.509
I/ Pharmaceuticals	1.103	2.346	–0.256	*1.215
I/ Biotechnology	1.289	3.545	0.242	1.277
I/ Food processors	0.562	**3.921	**1.724	***2.236
Foreign revenue	0.525	1.274	*1.963	**1.432
Number of segments	***1.046	***1.438	0.369	**0.373
Market-to-book	**–0.217	**–0.309	0.072	–0.004
Capital intensity	–0.501	–0.565	*0.422	**0.374
Corporate governance status	*–1.034	–1.224	0.324	0.309
Analyst following	***0.257	*0.022	*0.022	*0.042
Australia	**3.458	**4.679	**1.664	**1.427
UK	***4.994	***4.321	***2.711	***2.101
Canada	1.749	1.063	**1.669	0.725
Adj. R-square	0.237	0.323	0.226	0.317
Incremental R-square (OLS – on country variables)	***.079	**.047	***0.047	**.028
Panel B – Alternating country dummies				
UK as the omitted country dummy:				
Australia	–1.536	0.358	–1.050	–0.586
Canada	**–3.245	**–3.257	–1.041	**–1.309
USA	***–4.994	***–4.321	***–2.711	***–2.101
Canada as the omitted country dummy:				
Australia	1.710	**3.616	–0.008	0.880
UK	**3.245	**3.257	1.041	**1.309
USA	–1.749	–1.063	**–1.669	–0.725
Panel C – Regression models with dummy variable for North America (USA and Canada)				
North America	***–3.494	***–3.964	**–1.457	**–1.485
Adj. R-square	0.233	0.341	0.202	0.296

Results for 2SLS regression equations examining the association between company-level attributional properties and company attributes. In Panel A the USA is omitted country dummy variable and retail is the omitted industry dummy variable. Listing 20F = 1 if the company has a US listing requiring a Form 20-F reconciliation (0 otherwise). Change in leverage = (total debt/total equity 2003 – 2002)/ total debt/total equity 2002. Change in profitability = (ROE 2003 – 2002)/ABS ROE 2002. Negative EPS = 1 if company

Table 6
2SLS regressions – determinants of self-serving attributional tendencies (*continued*)
reports a negative EPS (0 otherwise). Foreign revenue = proportion of foreign revenue to total revenue. Market-to-book = market value of equity at financial year-end/book value of equity. Capital intensity = non-current assets/total assets. Corporate governance status = score out of three, where 1 is added if board chair is a non-executive director, the majority of the board are independent directors and the company uses a committee structure (audit, nomination and remuneration committee). Analyst following = number of analysts following a company. Panel B reports coefficients and significance levels for country dummy variables when they are rotated and the UK and Canada are, respectively, the omitted dummy variables. Panel C reports coefficients and significance levels when countries are grouped into USA/Canada and UK/Australia and the latter is the omitted dummy variable. *** significant at $p < 0.01$. ** significant at $p < 0.05$. * significant at $p < 0.10$ (two-tailed tests, one-tailed for country variables).

explain more and do so in a more self-presentational fashion. For example, companies followed by more analysts typically avoid technical-accounting explanations when they have the opportunity to self-servingly claim positive outcomes and tend to use tactical causal disclosures in a somewhat biased way. In that, analyst following affects explanatory behaviour in a similar way as expected regulatory and litigation costs with regard to cognitive effort, but in an opposite way with regard to self-serving behaviour.

5. Conclusion

We examine the extent to which a country's institutional environment affects listed companies' explanations of financial performance in narrative reports contained in their annual reports. Although there are many institutional and economic similarities among the four countries included in this study (the USA, Canada, the UK and Australia), our results suggest that differences in institutional environment and associated regulatory and litigation risks significantly affect the attributional properties of explanatory statements in a company's management commentary. Country differences relate to intensity of argument, presentational tendencies, preferences for formal language use and relative importance of tactical causal shading of explained outcomes through the use of entitlements, enhancements, excuses, justifications and causality denials. Consistent with behavioural accountability theory predictions, we find that the institutional setting of North American companies promotes extensive use of formal technical-accounting language in a consistent manner and significantly restrains the extent of self-serving tendencies in the explanations offered.

In this study, management commentary is portrayed as an accountability mechanism and its presentational content as a relational feature, reflecting narrative coping behaviour according to the nature and the extent of accountability pressures arising from a company's institutional environment. In that regard, we contend that presentational features of financial performance commentary can best be understood when placed in the context of relationships among entities embedded in the relevant social and institutional environment. Situational factors will affect the relative salience of rewards or sanctions and this will shape coping responses to accountability pressures. In a voluntary reporting regime with low legal scrutiny, potential informational rewards will be more salient, whereas in a mandatory, high-scrutiny context potential sanctions can be expected to become dominant, bringing companies to fall back on risk-avoiding verbal behaviour.

The higher expected regulatory and litigation costs embedded in the North American institutional environment seems to put significant constraints on the self-serving content of narratives: both causal defensiveness and causal assertiveness are significantly lower for North American firms, and especially for US firms. The threat of regulatory scrutiny and of disclosure-related litigation, could explain this modesty in self-presentational behaviour. This is consistent with Rogers et al. (2009) who suggest US firms can reduce litigation risk by decreasing the use of optimistic language in earnings announcements. One should also keep in mind that annual financial statements function in a long-term benchmarking mode. Previous explanations serve as reference points for follow-up disclosures. The risk of contradiction brings management to refrain from overtly biased self-serving verbal behaviour and this effect is probably stronger in jurisdictions where more intense monitoring of narrative reports and disclosure carries greater litigation risk.

The tendency to use formal language explanations intensively is especially noticeable for US companies: on average 47.28% of the performance explanations of US companies are framed as intermediary, technical-accounting explanations versus only 28.58% for Australian companies at the lower end of the sample range. These results suggest that in a high scrutiny environment,

explanatory patterns may, to a large extent, be the outcome of a ritualised disclosure process and imply routinised discourse explanations in terms of generally accepted or taken-for-granted antecedent-consequence relationships. Such a formal and ritualistic narrative disclosure stance is consistent with the vast literature on social facilitation published since Zajonc's (1965) classic paper, which suggests that cognitive overload and scrutiny pressures caused by the presence of an evaluative audience will facilitate dominant, well-rehearsed, but more rigid responses and will inhibit more descriptive types of analysis which are more responsive to changing circumstances. The conjecture that higher scrutiny pressures are likely to lead to a low-risk attitude in explanatory behaviour, and may inhibit extensive causal analysis, could negatively affect the information value of resulting explanations.

Our findings extend prior literature about attributional statements and disclosure in management commentary reports in several ways. We provide a cross-country study, which is useful given the internationalisation of accounting standards and financial reporting. Following adoption of International Financial Reporting Standards (IFRS) in Europe and elsewhere in 2005, there has been considerable attention given to the international comparability of financial reporting and the possible impact of country differences on financial statements. We provide evidence about the impact of institutional setting on narrative reporting in four countries which are actively involved in harmonisation of international accounting standard-setting and regulation. The evidence shows that institutional environment matters and, consistent with arguments presented by Schipper (2005) and Ball (2006), suggests that the setting in which reporting occurs may well be an important factor in explaining the extent to which goals of comparable financial reporting can be achieved.

In relation to attributional statements, we extend the literature since most prior studies are in a single-country setting. We present a methodology for comparing explanatory content of narrative reports between companies from different countries and we show identifiable country differences in properties of attributional statements. Future research may compare attributional statements in other countries over time, extending our understanding of how institutional setting and changes in setting affect explanatory content in companies' management commentary reports.

In relation to disclosure and institutional setting, we extend the literature by focusing on explanatory content in narrative reports. Other studies of the effect of regulatory setting and litigation risk have focused on disclosure in earnings forecasts and announcements, and in conference calls. Our study adds to this area of research by showing how disclosure in management commentary is affected by regulatory setting. There are few cross-country studies of narrative reporting and none which systematically compare performance explanations in a relatively large sample of companies from several industries. In our study we relate differences in institutional setting to differences in private and public enforcement properties. We argue that the presence of a mandatory or a voluntary narrative reporting regime is mainly endogenous to the wider institutional setting captured by the notion of expected regulatory and litigation costs. Although the availability of explicit rules of compliance with regard to MD&A reporting in North America definitely affects expected regulatory and litigation costs, our study does not allow us to make specific inferences with regard to the effect of mandatory rules on management commentary. On the one hand, the mandatory rules are not specific as to how explanations of accounting outcomes are to be constructed, whereas, on the other hand, the observed differences between US and Canadian companies show that within a mandatory MD&A reporting system, other institutional factors matter.

The important role of management commentary in communicating between companies and their investors is widely acknowledged (IASB, 2005). However, many deficiencies and weaknesses have been identified in the information provided and questions raised about how usefulness of the information is affected by the setting in which it is prepared. The International Accounting Standards Board (IASB, 2005) notes that there is little research about the effectiveness of different approaches to regulating management commentary reports. Our study provides evidence that is relevant to standard-setters such as the IASB and regulators such as the International Organization of Securities Commissions (IOSCO) as they consider the best way to promote useful narrative disclosure. Since we show that regulatory setting and potential litigation risk do impact on the way performance explanations are framed, our evidence is relevant to considerations of whether investors are best served by mandatory reports and active monitoring by market regulators. Causal explanations, even of an explicit self-serving nature, have been shown to reveal useful information (Baginski et al., 2004, 2008) and markets may not be served by making

companies avoid such arguments. In this regard, it could be argued that a country's institutional environment should not be too threatening so as to inhibit an explicit causal stance by corporate management. Future research in this area could investigate the extent to which the differences we find in attributional framing have economic consequences for financial information users.

Our study is subject to limitations common in research about narrative reporting. Key data have been hand collected, giving rise to two concerns. First, only a limited sample of companies and countries can be included due to the labour-intensive and time-consuming nature of data collection. We considered only companies from four countries, five industries and reports for one year. This may affect the generalisability of results to other companies, industries and time periods. Second, the extensive manual coding of narrative material involves individual views and interpretations. Although several controls were exercised over data collection to improve the reliability of the results, it is still possible that some variables have been measured with error.

Appendix 1
Explanation of terms – attributional content characteristics and dependent variables

Attributional statement	Antecedent – consequence statement. One or more sentences (or part thereof) in which an outcome or effect (relating to company's financial performance, i.e. revenue, expense or net income/earnings/profits item) is linked to one or more antecedents for that outcome, e.g. sales increased due to strong consumer demand and an increase in retail outlets.
Explained outcomes	
Company/segment	The explained outcome relates to the company as a whole and/or to a segment of the company, e.g. sales for the company decreased in the current year (company). However, there was strong performance of the Orange division, following restructuring carried out last year (segment).
Valence of effect	A positive effect is favourable for the company (e.g. revenue increasing, expenses decreasing). A negative effect is not favourable (e.g. expenses have increased, without a commensurate increase in revenue).
Prospective statement	The attributional statement relates to a future outcome, e.g. sales are expected to increase in the following year due to improved economic conditions including lower interest rates.
Explanatory effort (H1)	
Depth of explanations*	Number of explanations for each statement of effect (may be one or more). e.g. sales increased due to strong consumer demand and an increase in retail outlets (one outcome, two antecedents).
Density of explanations*	Number of a company's attribution statements relative to number of items of disclosure about results of operations in MD&A, OFR or equivalent.
Inconsistency in explanatory format for positive versus negative content (H2)	
Valence inconsistency in formality of explanations*	Relative use of accounting-technical explanations (intermediary accounts) for positive versus negative effects, measured as the number of intermediary explanations of negative outcomes minus the number of intermediary explanations of positive outcomes, given the presence of both positive and negative explained outcomes.
Valence inconsistency in depth of explanations*	Number of explanations per effect for positive versus negative effects, measured as the average number of explanations for each positive outcome minus the average number of explanations for each negative outcome, given the presence of both positive and negative explained outcomes.
Formality (H3)	
Technical-accounting versus causal explanation	Technical-accounting explanations are based on technical-accounting language and are of an intermediary nature (e.g. profit increased because margins improved). Causal explanations refer to other types of explanation (e.g. sales revenue increased due to stronger demand and a more buoyant economy).
Technical-accounting explanations (%)*	Relative use of intermediary (technical-accounting) explanations, measured as the % of intermediary explanations on total number of attributional statements.
Informality bias on positives*	(Relative) tendency to explain positive outcomes more in explicitly causal terms than in technical-accounting language, measured as number of positive outcomes explained causally minus number of positive outcomes explained through intermediary accounts.
Self-serving tendencies (H4)	
Assertive causal bias*	(Relative) tendency to explain positive outcomes more from internal than external causal antecedents, measured as number of positive outcomes explained by internal causal factors minus number of positive outcomes explained through external causal factors.

Appendix 1 *continued*

Defensive causal bias*	(Relative) tendency to explain negative outcomes more from external than internal causal antecedents, measured as number of negative outcomes explained by external causal factors minus number of negative outcomes explained through internal causal factors.
Enhancement	The framing of a positive outcome relative to a negative external causal factor, e.g. the company achieved strong revenue growth in the Orange division, despite an industry-wide decline in demand for goods produced.
Entitlement	A positive outcome is attributed to an internal causal factor (e.g. management decision) rather than to an external causal factor (e.g. industry or economy-wide factors).
Use of enhancements and entitlements (%)*	Use of entitlements and enhancements is measured as the % of the sum of enhancements and entitlements on total number of attributional statements.
Excuse	A negative outcome is attributed to an external causal factor (e.g. industry or economy-wide factors) rather than to an internal causal factor (e.g. management decision). For example, sales declined in the period, largely due to poor demand reflecting an unexpected downturn in the economic cycle.
Justification	A negative outcome is rationalised by pointing to a goal or purpose (reason-type of explanations), e.g. R&D expenses increased in order to accelerate the introduction of new high-quality products.
Causality denial	The framing of a negative outcome relative to a positive internal causal factor (implicit denial of responsibility for a negative outcome by referring to internal proactive or remedial factors), e.g. despite increased efforts of sales staff, sales declined in the period.
Use of excuses, justifications and causality denials (%)*	Use of excuses, justifications and causality denials is measured as the % of the sum of excuses, justifications and causality denials on total number of attributional statements.

*Company level attributional properties used as independent variables.

Appendix 2
Coding dimensions of attribution statements

An attribution statement:

> 'One or more sentences (or part thereof) in which an outcome or effect (relating to a company's financial performance, i.e. revenue, expense or net income/earnings/profit item) is linked to one or more antecedents for that outcome. Each attribution statement was coded on dimensions A01–A05 for the outcome/effect phrase and B10–B15 for each antecedent phrase.'

A. Outcome/effect

A01 Nature of the effect
1. Revenue
2. Expenses
3. Income/earnings/profit

A02 Valence of the effect
1. Positive (e.g. increase sales, decrease expenses)
2. Negative (e.g. decrease sales, increase expenses)
3. Unchanged/flat

A03 Time orientation of the effect
1. Past (effect concerns event of preceding fiscal year)
2. Present (year under review)
3. Future

A04 Effect is expressed in quantitative or qualitative terms
1. Quantitative
2. Qualitative

A05 Level of the explained effect
1. Division/product/geographic segment
2. Company as a whole

B. Antecedent

B10 Explicitness of the antecedent-consequence relationship
1. Explicit
2. Implicit
3. Decomposition (effect = sales, cause = sales)

B11 Direction of antecedent-consequence relationship
1. Same direction
2. Opposite direction

B12 Time orientation of antecedent
1. Past (effect concerns event of preceding fiscal year)
2. Present (year under review)
3. Future

B13 Antecedent is expressed in quantitative or qualitative terms
1. Quantitative
2. Qualitative

B14 Nature of explanation
1. Causal explanation
2. Accounting-technical explanation

B15 Locus of causality of antecedent
1. Internal cause, explicit reference to management board
2. Internal cause, explicit reference to segment division in the company
3. Internal cause with explicit reference to personnel
4. Other internal causes
5. External cause; cause is on sector or industry level
6. External cause; cause is on general economic level
7. Other external causes

Appendix 3
Coding examples: attribution statements

(1) Antecedent-consequence relationship: an expense outcome is linked to two explanations, one coded as technical-accounting and the other as causal:

> The cost of merchandise sold decreased in 2003 compared to 2002 [*effect*] reflecting lower spending on goods and services due to lower sales [*antecedent (a) technical-accounting*] as well as favourable procurement conditions [*antecedent (b) causal*].
> *Sears Canada Inc. 2003 Annual Report, p. 28 (Canada Retail).*

(2) Explicit explanations: characterised by a causal conjunction or connecting phrase (e.g. because of, as a result of) and the verb in the sentence can refer to an explicit explanation (e.g. lead to, result in). For example, consider the following positive outcome with an internal cause which uses 'through' as the causal conjunction:

> 'Foreign exchange losses decreased in the year [*effect*] through better management of the consolidated entity affairs [*antecendent – causal*].'
> *Peptech 2003 Annual Report, p. 18 (Australia Biotech).*

(3) Implicit explanation: when cause and effect are not explicitly related. These implicit explanations are only taken into account when cause and effect can be reasonably linked to each other. In the following causal explanations (an excuse and an entitlement) cause and effect are linked by the words 'as a result of':

> 'The company's hog production operations were negatively impacted in 2003 as a result of the sharp rise in the Canadian dollar [antecedent – causal] which immediately reduced producer revenues [effect].'
> *Maple Leaf Foods, 2003, p. 29 (Canadian Food producer).*

> 'We are continuing to realise gains in our primary margin [effect] as a result of actions to increase overseas production and consolidate our supply base [antecedent – causal].'
> *Marks and Spencer, 2003, p. 3 (UK Retail).*

(4) Time orientation: as shown below in a prospective causal statement:

> 'The outsourcing of the liquid sorbital production at Atlas Point was completed this year [antecedent – causal]. These changes are expected to yield a profit improvement next year [effect].'
> *Associated British Foods, 2003, p. 20 (UK Food producer).*

(5) Technical-accounting attributions: explanations of accounting effects in financial accounting language:

> 'During fiscal 2003 … lower depreciation expense [antecedent: internal – technical-accounting] contributed to improvement in gross profit and margin [effect].'

> 'Other income increased to $3,350,000 in 2003 from $2,285,000 in 2002 [effect] primarily as a result of $932,000 improvement in equity in net earning of affiliates [antecedent: internal – technical-accounting].'
> *Florida Rock Industries Inc., 2003, pp. 8–9 (US Building Materials).*

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